

US009636231B2

(12) United States Patent Rhoda et al.

(54) EXPANDABLE VERTEBRAL PROSTHESIS

(71) Applicant: **GLOBUS MEDICAL, INC**, Audubon, PA (US)

(72) Inventors: William S Rhoda, Media, PA (US);

Noah Hansell, King of Prussia, PA (US); Andrew Lee, Santa Rosa, CA

(US)

(73) Assignee: Globus Medical, Inc., Audubon, PA

(US)

(*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 0 days.

This patent is subject to a terminal dis-

claimer.

(21) Appl. No.: 14/571,330

(22) Filed: Dec. 16, 2014

(65) Prior Publication Data

US 2015/0100131 A1 Apr. 9, 2015

Related U.S. Application Data

(63) Continuation of application No. 14/155,057, filed on Jan. 14, 2014, which is a continuation of application (Continued)

(51) **Int. Cl.**A61F 2/44 (2006.01)

A61F 2/46 (2006.01)

(Continued)

(10) Patent No.:

US 9,636,231 B2

(45) **Date of Patent:**

*May 2, 2017

(52) U.S. Cl.

(Continued)

(58) Field of Classification Search

CPC A61F 2/44; A61F 2/4611; A61F 2/4465 See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

4,932,975 A 6/1990 Main et al. 6,752,832 B2 6/2004 Neumann

(Continued)

FOREIGN PATENT DOCUMENTS

CA 2524066 A1 11/2004 EP 1219266 B2 9/2006

(Continued)

Primary Examiner — Andrew Yang

(57) ABSTRACT

The present invention relates to an expandable prosthetic implant device for engagement between vertebrae generally comprising an inner member, outer member, and gear member positioned coaxial with respect to each other such that the inner and outer members are moveable relative to each other along an axis. The gear member is axially fixed to the outer member and freely rotatable with respect to the outer member and the gear member threadedly engages a threaded portion of the inner member to translate inner member along the axis. The implant is configured to engage the vertebrae in a predetermined alignment and the gear member includes gear teeth exposed to the exterior and configured to be accessible by a tool member at a plurality of angular positions around the perimeter of the implant device.

19 Claims, 10 Drawing Sheets

